**Platform Switching. A Biological concept**

**Introduction**

There some questions about what is, or what is not platform switching, and of course, what are the advantages of using a platform switched concept in the implants in our daily practice.

Historically, success criteria in oral implantology is well known, and this success criteria should be achieved in any treatment involving implants. This success criteria were well explained by Albrektsson (Albrektsson et al. 1986), and this criteria currently still prevailing.

In nowadays the patients expectations for implant treatments outcomes increased in the last decade, and maybe what it was accepted few years ago (2mm of marginal bone loss in the first year), maybe are not in accordance with the esthetic expectations of our patients.

But, why that bone loss happens always when an implant is placed? Ericsson published that this marginal bone loss is related with the concept of "inflammatory cell infiltrate ICT" of the gap between the fixture and the abutment of the implant. This gap is filled and contaminated by bacterias which leads to a bone resorption.

This article also explains the reason why the biological width is formed around implants, previously described by Berglundh (Berglundh et al. 1991).

Other reasons for bone remodeling around implants are related with other factors, that where described by Abrahamsson and Hermann in other articles that may help to predict bone resorption around implants. This factors are:
Different causes than of the bone remodeling after the placement of an implant: Thickness of the mucosa, position of the implant and the design of the implant.

- The thickness of the mucosa (Abrahamsson et al. 1996)
- The type of insertion (crestal, supracrestal or infracrestal) (Hermann et al. 2001)
- The design of the implant (Alomrani et al. 2005).

**From a clinical point of view...**

It is well known the distance that an implant must keep from a teeth, and the distance between two implants (Tarnow et al. 2000), although this findings where well discussed in other article, and maybe old paradigms are nearly to change (Gastaldo et al. 2004).

This distance that we should respect is related with the formation of the biological width around the fixtures.

This concepts are only correct when non platform switched implants are used. There is a explanation why this concepts are not applied in implants with the platform switching concept.

Implants with platform switching concept allow a distance between them below 3 mm.
What is platform switching implants?

We could say that platform switching is the implantology Viagra. Why? It resulted from a mistake when wide implants became a common treatment option and non matching abutment where provided to the clinicians. After this abutments where delivered, during the observationally period, marginal bone loss was not present in almost every cases (Lazzara & Porter 2006).

Regarding a RCT published by Canullo, the findings are showed in the pictures below, where it concludes that the marginal bone loss is reduced when the mismatch is larger (Canullo et al. 2009).

![Different mismatch leads to different bone resorption. The bigger is the mismatch, the less bone resorption is expected.](image)

**Conclusion**

Although the lot of research that has been published in the last years about platform switching implants as a reliable treatment option to maintain the peri-implant bone and soft tissue architecture, there are other factors related with the preservation of marginal bone (Zipprich et al. 2009), and one of the most important factors is the presence of micro-motion between the fixture and the abutment, that creates a pumping effect which throws residual content from the connection directly to the biological width and this may create bone resorption and soft tissue recession.

Although long term data and trials are needed to state a conclusion, so far there is almost a consensus about the benefits of platform switching. With the findings of the recent trials we can conclude that implants with platform switching concept are mandatory when short implants are used and when we are going throw a treatment with an high aesthetic risk.
**Bibliography**


Zipprich, H., Weigl, P. & Lange, B., 2009. Zipprich: Micromovements at the implant-abutment...